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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/635,514	08/07/2003	Isamu Kaneko	240533US0CONT	8445
22850	7590	04/08/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			PADGETT, MARIANNE L	
			ART UNIT	PAPER NUMBER
			1762	

DATE MAILED: 04/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/035,514

Applicant(s)

Kaneko et al

Examiner

M. L. Padgett

Group Art Unit

1762

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☒ Responsive to communication(s) filed on 1/9/04, 11/7/03 + 8/7/03
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-9 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-9 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).

☒ All ☒ Some* ☐ None of the:

- ☐ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. _____

☒ Copies of the certified copies of the priority documents have been received

in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: The published PCT document for PCT/JP02/00794 Found in Copending Case WO 02/065212 AI

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 11/7/03 8/7/03 ☐ Interview Summary, PTO-413
- ☒ Notice of Reference(s) Cited, PTO-892 ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948 ☐ Other _____

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1. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 4 “the formula (1)” would appear to be referring to line 11 of the claim, lacking any “formula (1)” recitation elsewhere, but the phrasing “an organic solvent (c):” that immediately proceeds line 11 would appear to indicate it’s the solvent, especially as there was already given a description in lines 4-8 of the fluorinated diene (? and formula (1)). It is noted that most of these limitations are repeated again in lines 14-17, but without any antecedent basis being indicated, thus nothing in the claim language to prevent lines 11-17 from being a description of the solvent, as phrased. The examiner does not believe that this was the intent, as it is not logical, rather it appears that the limitations are ambiguous due to poor phrasing or placement and redundant limitations.

In claim 2, what is meant by R^3 or R^4 being “a single bond”? It is very nonstandard for these variables not to represent any atoms or ligands at all, which would appear to be what this option is saying, i.e. Q may be only $\begin{array}{c} R^5 \\ | \\ -C- \\ | \\ R^6 \end{array}$, and since R^5 may be H, Q may at its simplest be any acid or any reacted acid (blocked) attached to a carbon. Is this the intent, or was something else meant?

Claim 7 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. While the “for exposure...” limitation of claim 6, from which claim 7 depends, provides a limitation to the composition, such that it needs to be capable of

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being used as a resist or to make a resist for $\lambda \leq 200$ nm, the claim 7 limitation specifying that the wavelengths are various laser beams adds NO further limitations to the COMPOSITION, as the laser beams are in no way part of the claimed composition.

In claim 8, as written it is unclear where or how the pattern is formed, since the only claimed action is the irradiation, and the "capable of generating..." is not a positive limitation, as it does not necessitate any acid be generated, nor does it say what the effect of the acid is, if it is generated. The examiner guesses that the acid generated by (B), then reacts with the "blocked acid" to make the fluorinated diene acidic, but this change in acidity does not necessitate any change in the shape of the film. So what's happening or what's missing from the process claim?

Also, with respect to claims 7 and 9, "wavelength" cannot be "beams." They can be in beams, but are not themselves beams!

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-9 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-30 of copending Application No. 10/376,243. Although the conflicting claims are not identical, they are not

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patentably distinct from each other because they have overlapping scopes, where various limitations are claimed in different orders, or using different, but synonymous wording. Claims 1 of the applications differ by the repeating units of the present case being called "monomeric units" in (243), and being formed by polymerization with acrylic monomers of the formula (2) $\text{CH}_2=\text{CR}^3\text{-CO}_2\text{R}^4$. However, as claim 5 of the present case also uses other monomers (generic), plus the same fluorinated diene with the same organic solvent and acid-generating compound, is said to be cyclopolymerized in each case, the (243) application is a species of the generic fluoropolymers of the present case, where the copolymer comes from commonly employed acrylic monomer species, an obvious choice for the generic monomer due to conventional usage in resists.

While the (243) application does not specify any particular wavelengths to be employed, it does requires UV exposure, and one of ordinary skill would have determined useful ranges dependent on the sensitivity of the specific compound employed via known properties or routine experimentation.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

4. Copending case SN 10/637,504 is noted to be directed to only fluoropolymers formed by the compound of formula (1) of claim 1, and not the present resin composition, however its complementary process "comprises", hence is the generic of the present process.

5. Claims 1 and 8 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 4 of copending Application No. 10/637,504. Although the conflicting claims are not identical, they are not patentably

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distinct from each other because the process of forming the fluoropolymer of application (504) is the generic of the present process, where the "comprising" language indicates that any complementary steps may also be done, thus the process of (504) is totally encompassed by the present claims or an obvious variation or broader description there of.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

6. Claims 1-9 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-30 of U.S. Patent No. 10/376,243 in view of Feiring et al (Pct WO 00/67072). Alternatively to section 3 above, the teachings of Feiring et al (PCT) have an analogous resist composition using fluoroalcohols, where the acidity of the -OH group is imparted by the fluorination, and photoacid generators may be included. The various exemplified copolymers include acrylate groups that read on the (243) applications' acrylic monomer, hence demonstrating the above stated obviousness for the use of that species generally, for the present application's generically claimed monomer. See p.11, 14, 16, 18 and examples 8, 10, 11, 16-18, etc, in Feiring et al.

7. Prior art of interest for teaching various fluorodiene compounds, include Unoki Masao et al (JP 02-315,770); Yamamoto et al (JP 09-202,855); or Kawasaki et al (JP 03-067,262); or US patents to Navarrin et al, Feiring et al, Kashiwage et al, Smart et al and Elizabeth Lo, but while many have ethers in the main chain and cyclopolymerize, no blocked acid group or the like appears to be taught in these references. The prior art of Toriumi et al ("Resist material...lithography"); and Fedynyshyn (WO 01/63362) and Feiring et al (WO 00/17712) has teachings of resist composition used in analogous processes to those claimed, with

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organic solvents, acidic generators (photoacids), but do not teach dienes for their fluoropolymer component. Fryd et al (2003/0211417A1) and the literature article to Ito et al "Polymer design...resists" are of further interest for using fluoro-compounds with acid labile groups and vinyl groups, but not in the single chemical compound of the claimed structure or formula.

Other references that are not prior art, but have compounds, resist compositions and processes of significant interest include Miya et al (2003/0194639A1); Hatakeyama et al (2003/ 0194644 A1); Toriumi et al ("Fluoropolymer...lithography") and Iwazawa et al (JP 2003-330196A).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. L. Padgett whose telephone number is (571) 272-1425. The examiner can normally be reached on M-F from 8:30a.m to 4:30p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beck Shrive, can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306 for all official papers.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Padgett/tgd

March 30, 2004 & April 1, 2004



MARIANNE PADGETT
PRIMARY EXAMINER